Here's the functional hierarchy for each role, formatted as a Scope of Work section:

I. Student Athlete (Primary User)

Functional Hierarchy:

A. Account Management

- **1. Sign Up/Registration**
  - **a. User Interface (UI) Design:** Design intuitive UI for email/username/password input fields, age verification, school/team selection (optional), and privacy policy acceptance.
  - **b. Backend Development:** Implement backend logic for user registration, including data validation, age verification, and database storage.
  - **c. Security:** Implement robust security measures to protect user data during registration, including encryption and secure password hashing.
- **2. Login**
  - **a. UI Design:** Design UI for email/username/password input fields, password recovery functionality, and two-factor authentication (optional).
  - **b. Backend Development:** Implement backend logic for user authentication, including password verification, session management, and two-factor authentication integration (if applicable).
  - **c. Security:** Implement security measures to prevent unauthorized access and protect user credentials.
- **3. Profile Management**
  - **a. UI Design:** Design UI for updating personal information, setting privacy settings, and linking external accounts (optional).
  - **b. Backend Development:** Implement backend logic for profile updates, privacy setting management, and external account integration (if applicable).
  - **c. Data Security:** Ensure secure storage and access control for user profile data.
- **4. Logout**
  - **a. UI Design:** Design UI for logout functionality.
  - **b. Backend Development:** Implement backend logic for secure session termination, including clearing cookies and session variables.

B. Dashboard

- **1. Overview**
  - **a. UI Design:** Design UI for displaying progress visualization (charts, graphs) for key areas (fitness, nutrition, sleep, stress, substance use), personalized recommendations, and quick access to features.
  - **b. Backend Development:** Implement backend logic for data aggregation, visualization, and personalized recommendation generation.
  - **c. Data Visualization:** Integrate data visualization libraries to create interactive charts and graphs.
- **2. Activity Tracking**
  - **a. UI Design:** Design UI for exercise logging (type, duration, intensity), GPS tracking (optional), and integration with wearable devices (optional).
  - **b. Backend Development:** Implement backend logic for activity logging, GPS data processing, and wearable device integration (if applicable).
  - **c. Data Storage:** Design database schema for storing activity data.
- **3. Nutrition Tracking**
  - **a. UI Design:** Design UI for food diary (meal logging, calorie tracking), recipe database (optional), and nutritional information display.
  - **b. Backend Development:** Implement backend logic for food logging, calorie calculation, recipe database management, and nutritional information retrieval.
  - **c. Data Storage:** Design database schema for storing nutrition data.
- **4. Sleep Tracking**
  - **a. UI Design:** Design UI for sleep duration and quality monitoring (optional), sleep schedule management, and sleep hygiene tips.
  - **b. Backend Development:** Implement backend logic for sleep data processing (if using sleep tracking devices), sleep schedule management, and sleep hygiene tip generation.
  - **c. Data Storage:** Design database schema for storing sleep data.
- **5. Stress Management**
  - **a. UI Design:** Design UI for stress level assessment tools, relaxation techniques, and mindfulness exercises (optional).
  - **b. Backend Development:** Implement backend logic for stress assessment, relaxation technique selection, and mindfulness exercise integration (if applicable).
  - **c. Content Management:** Manage content for relaxation techniques and mindfulness exercises.
- **6. Substance Use Prevention**
  - **a. UI Design:** Design UI for educational content, resources and support information, and interactive quizzes/games (optional).
  - **b. Backend Development:** Implement backend logic for content management, resource retrieval, and quiz/game integration (if applicable).
  - **c. Content Management:** Manage educational content, resources, and quiz/game content.

C. Resources and Support

- **1. Local Resources**
  - **a. UI Design:** Design UI for displaying local resource directory, including contact information and website links.
  - **b. Backend Development:** Implement backend logic for managing local resource directory, including data storage and retrieval.
  - **c. Data Management:** Design database schema for storing local resource information.
- **2. National Resources**
  - **a. UI Design:** Design UI for displaying links to national organizations and websites.
  - **b. Backend Development:** Implement backend logic for managing national resource links.
  - **c. Data Management:** Design database schema for storing national resource links.
- **3. Educational Content**
  - **a. UI Design:** Design UI for displaying educational content (articles, videos, infographics).
  - **b. Backend Development:** Implement backend logic for content management, including storage, retrieval, and display.
  - **c. Content Management:** Manage educational content, including creation, editing, and deletion.

D. Communication

- **1. In-App Messaging**
  - **a. UI Design:** Design UI for direct messaging with coaches/athletic directors (optional) and group messaging with teammates (optional).
  - **b. Backend Development:** Implement backend logic for messaging functionality, including message storage, retrieval, and delivery.
  - **c. Real-Time Communication:** Integrate real-time communication features (e.g., WebSockets) for instant messaging.
- **2. Notifications**
  - **a. UI Design:** Design UI for displaying notifications.
  - **b. Backend Development:** Implement backend logic for notification generation, delivery, and management.
  - **c. Push Notifications:** Integrate push notification services for delivering notifications to users' devices.

E. Data and Privacy

- **1. Data Collection**
  - **a. Data Collection Policy:** Define data collection practices and obtain user consent.
  - **b. Data Storage:** Design database schema for storing user-provided data and device data (optional).
  - **c. Data Security:** Implement security measures to protect user data, including encryption and access control.
- **2. Data Security**
  - **a. Encryption:** Implement encryption for sensitive data, including user credentials and personal information.
  - **b. Access Control:** Implement access control mechanisms to restrict unauthorized access to user data.
  - **c. Security Audits:** Conduct regular security audits to identify and address vulnerabilities.
- **3. Data Privacy**
  - **a. Compliance:** Ensure compliance with relevant data privacy regulations (e.g., GDPR, CCPA).
  - **b. User Control:** Provide users with control over their data sharing and access.
  - **c. Data Deletion:** Implement procedures for data deletion upon user request.

II. Coach/Athletic Director

Functional Hierarchy:

A. Account Management

- **1. Sign Up/Registration**
  - **a. UI Design:** Design UI for email/username/password input fields, school/team affiliation verification, and privacy policy acceptance.
  - **b. Backend Development:** Implement backend logic for user registration, including data validation, school/team verification, and database storage.
  - **c. Security:** Implement robust security measures to protect user data during registration, including encryption and secure password hashing.
- **2. Login**
  - **a. UI Design:** Design UI for email/username/password input fields, password recovery functionality, and two-factor authentication (optional).
  - **b. Backend Development:** Implement backend logic for user authentication, including password verification, session management, and two-factor authentication integration (if applicable).
  - **c. Security:** Implement security measures to prevent unauthorized access and protect user credentials.
- **3. Profile Management**
  - **a. UI Design:** Design UI for updating personal information, setting privacy settings.
  - **b. Backend Development:** Implement backend logic for profile updates, privacy setting management.
  - **c. Data Security:** Ensure secure storage and access control for user profile data.

- **4. Logout**
  - **a. UI Design:** Design UI for logout functionality.
  - **b. Backend Development:** Implement backend logic for secure session termination, including clearing cookies and session variables.

B. Dashboard

- **1. Team Overview**
  - **a. UI Design:** Design UI for displaying aggregate data on team's progress in key areas (fitness, nutrition, sleep, stress, substance use), visualization tools (charts, graphs), and team performance comparison (optional).
  - **b. Backend Development:** Implement backend logic for data aggregation, visualization, and team performance comparison (if applicable).
  - **c. Data Visualization:** Integrate data visualization libraries to create interactive charts and graphs.
- **2. Athlete Management**
  - **a. UI Design:** Design UI for viewing individual athlete profiles and progress, filtering athletes by criteria, and sending personalized messages.
  - **b. Backend Development:** Implement backend logic for athlete profile retrieval, filtering, and message sending.
  - **c. Data Access:** Ensure secure access to athlete data for coaches/athletic directors.
- **3. Resource Management**
  - **a. UI Design:** Design UI for accessing and sharing educational content, adding local resources, and creating custom content.
  - **b. Backend Development:** Implement backend logic for content management, including storage, retrieval, and sharing.
  - **c. Content Management:** Manage educational content, local resources, and custom content for the team.

C. Communication

- **1. In-App Messaging**
  - **a. UI Design:** Design UI for sending messages to individual athletes or the entire team, and creating group chats.
  - **b. Backend Development:** Implement backend logic for message sending, storage, and retrieval.
  - **c. Real-Time Communication:** Integrate real-time communication features (e.g., WebSockets) for instant messaging.
- **2. Notifications**
  - **a. UI Design:** Design UI for displaying notifications.
  - **b. Backend Development:** Implement backend logic for notification generation, delivery, and management.
  - **c. Push Notifications:** Integrate push notification services for delivering notifications to athletes' devices.
- **3. Team Chat**
  - **a. UI Design:** Design UI for team-wide communication, including file sharing capabilities.
  - **b. Backend Development:** Implement backend logic for team chat functionality, including message storage, retrieval, and file sharing.

D. Data and Reporting

- **1. Data Access**
  - **a. UI Design:** Design UI for viewing aggregated data on team's progress and downloading reports.
  - **b. Backend Development:** Implement backend logic for data retrieval and report generation.
  - **c. Data Security:** Ensure secure access to team data for coaches/athletic directors.
- **2. Data Visualization**
  - **a. UI Design:** Design UI for interactive charts and graphs, and customizable reporting options.
  - **b. Backend Development:** Implement backend logic for data visualization and report customization.
  - **c. Data Visualization Libraries:** Integrate data visualization libraries to create interactive charts and graphs.
- **3. Data Privacy**
  - **a. Compliance:** Ensure compliance with data privacy regulations.
  - **b. Data Sharing Control:** Provide coaches/athletic directors with control over data sharing with athletes and DSCYF/DPBHS.

III. DSCYF/DPBHS Staff

Functional Hierarchy:

A. Account Management

- **1. Sign Up/Registration**
  - **a. UI Design:** Design UI for email/username/password input fields, role verification (DSCYF/DPBHS staff), and privacy policy acceptance.
  - **b. Backend Development:** Implement backend logic for user registration, including data validation, role verification, and database storage.
  - **c. Security:** Implement robust security measures to protect user data during registration, including encryption and secure password hashing.
- **2. Login**

    - **a. UI Design:** Design UI for email/username/password input fields, password recovery functionality, and two-factor authentication.
    - **b. Backend Development:** Implement backend logic for user authentication, including password verification, session management, and two-factor authentication integration.
    - **c. Security:** Implement security measures to prevent unauthorized access and protect user credentials.
- **3. Profile Management**
    - **a. UI Design:** Design UI for updating personal information, setting privacy settings.
    - **b. Backend Development:** Implement backend logic for profile updates, privacy setting management.
    - **c. Data Security:** Ensure secure storage and access control for user profile data.
- **4. Logout**
    - **a. UI Design:** Design UI for logout functionality.
    - **b. Backend Development:** Implement backend logic for secure session termination, including clearing cookies and session variables.

B. Dashboard

- **1. Program Overview**
    - **a. UI Design:** Design UI for displaying aggregate data on app usage across all schools and teams, visualization tools (charts, graphs), and performance metrics.
    - **b. Backend Development:** Implement backend logic for data aggregation, visualization, and performance metric calculation.
    - **c. Data Visualization:** Integrate data visualization libraries to create interactive charts and graphs.
- **2. School/Team Management**
    - **a. UI Design:** Design UI for viewing data for individual schools and teams, filtering data by criteria, and accessing reports.
    - **b. Backend Development:** Implement backend logic for data retrieval, filtering, and report generation.
    - **c. Data Access:** Ensure secure access to school/team data for DSCYF/DPBHS staff.
- **3. Content Management**
    - **a. UI Design:** Design UI for adding, editing, and deleting educational content, managing local resource directories, and creating custom content.
    - **b. Backend Development:** Implement backend logic for content management, including storage, retrieval, and distribution.
    - **c. Content Management System:** Integrate a content management system (CMS) for efficient content management.

C. Communication

- **1. Messaging**
    - **a. UI Design:** Design UI for sending messages to coaches/athletic directors and external resource providers.
    - **b. Backend Development:** Implement backend logic for message sending, storage, and retrieval.
    - **c. Real-Time Communication:** Integrate real-time communication features (e.g., WebSockets) for instant messaging.
- **2. Notifications**
    - **a. UI Design:** Design UI for displaying notifications.
    - **b. Backend Development:** Implement backend logic for notification generation, delivery, and management.
    - **c. Push Notifications:** Integrate push notification services for delivering notifications to users' devices.

D. Data Analysis and Reporting

- **1. Data Access**
    - **a. UI Design:** Design UI for accessing all user data (aggregated and individual) and downloading raw data.
    - **b. Backend Development:** Implement backend logic for data retrieval and download.
    - **c. Data Security:** Ensure secure access to user data for DSCYF/DPBHS staff.
- **2. Data Visualization**
    - **a. UI Design:** Design UI for interactive dashboards for data exploration and customizable reports for program evaluation.
    - **b. Backend Development:** Implement backend logic for data visualization and report customization.
    - **c. Data Visualization Libraries:** Integrate data visualization libraries to create interactive charts and graphs.
- **3. Data Security**
    - **a. Access Control:** Implement access control mechanisms to restrict unauthorized access to user data.
    - **b. Compliance:** Ensure compliance with data privacy regulations.

E. User Management

- **1. User Accounts**
    - **a. UI Design:** Design UI for creating, editing, and deleting user accounts, and managing user roles and permissions.
    - **b. Backend Development:** Implement backend logic for user account management, including role assignment and permission control.
- **2. Account Activation**
    - **a. UI Design:** Design UI for approving new user registrations and deactivating accounts.
    - **b. Backend Development:** Implement backend logic for account activation and deactivation.
- **3. Password Reset**
    - **a. UI Design:** Design UI for managing password reset requests.
    - **b. Backend Development:** Implement backend logic for password reset functionality, including email verification and password

updates.

IV. External Resource Providers

Functional Hierarchy:

A. Account Management

- **1. Sign Up/Registration**
  - **a. UI Design:** Design UI for email/username/password input fields, organization verification, and privacy policy acceptance.
  - **b. Backend Development:** Implement backend logic for user registration, including data validation, organization verification, and database storage.
  - **c. Security:** Implement robust security measures to protect user data during registration, including encryption and secure password hashing.
- **2. Login**
  - **a. UI Design:** Design UI for email/username/password input fields, password recovery functionality, and two-factor authentication (optional).
  - **b. Backend Development:** Implement backend logic for user authentication, including password verification, session management, and two-factor authentication integration (if applicable).
  - **c. Security:** Implement security measures to prevent unauthorized access and protect user credentials.
- **3. Profile Management**
  - **a. UI Design:** Design UI for updating organization information, setting privacy settings.
  - **b. Backend Development:** Implement backend logic for profile updates, privacy setting management.
  - **c. Data Security:** Ensure secure storage and access control for user profile data.
- **4. Logout**
  - **a. UI Design:** Design UI for logout functionality.
  - **b. Backend Development:** Implement backend logic for secure session termination, including clearing cookies and session variables.

B. Resource Management

- **1. Resource Listing**
  - **a. UI Design:** Design UI for submitting organization's resources, including contact information, website links, and program descriptions.
  - **b. Backend Development:** Implement backend logic for resource submission, including data validation and storage.
  - **c. Data Management:** Design database schema for storing resource information.
- **2. Resource Approval**
  - **a. UI Design:** Design UI for DSCYF/DPBHS staff to review and approve submitted resources.
  - **b. Backend Development:** Implement backend logic for resource review and approval, including workflow management and notification systems.
- **3. Resource Updates**
  - **a. UI Design:** Design UI for updating organization's resources.
  - **b. Backend Development:** Implement backend logic for resource updates, including data validation and database updates.

C. Communication

- **1. Messaging**
  - **a. UI Design:** Design UI for receiving messages from DSCYF/DPBHS staff and communicating with other resource providers (optional).
  - **b. Backend Development:** Implement backend logic for message sending, storage, and retrieval.
  - **c. Real-Time Communication:** Integrate real-time communication features (e.g., WebSockets) for instant messaging.
- **2. Notifications**
  - **a. UI Design:** Design UI for displaying notifications.
  - **b. Backend Development:** Implement backend logic for notification generation, delivery, and management.
  - **c. Push Notifications:** Integrate push notification services for delivering notifications to users' devices.

D. Data and Reporting

- **1. Data Access**
  - **a. UI Design:** Design UI for viewing data on resource usage and accessing reports.
  - **b. Backend Development:** Implement backend logic for data retrieval and report generation.
  - **c. Data Security:** Ensure secure access to resource usage data for external resource providers.
- **2. Data Privacy**
  - **a. Compliance:** Ensure compliance with data privacy regulations.
  - **b. Data Sharing Control:** Provide external resource providers with control over data sharing with DSCYF/DPBHS.

This detailed Scope of Work section provides a technical breakdown of the functional hierarchy for each role, outlining the UI design, backend development, data management, and security considerations. This information will be crucial for the software development team to understand the requirements and build a robust and user-friendly app.